

I Claim:

1. A removable antenna assembly comprising:
a plurality of antenna elements for transmitting and receiving wireless signals
5 over a plurality of wireless channels;
a sectorized mounting structure is provided for retaining each of the plurality of
antenna elements substantially in an antenna isolation configuration, so as to enable
simultaneous sectorized signal communication of the antenna elements over the wireless
channels;
10 at least one removable network interface for selectively enabling a signal
connection between a radio digital interface component and the plurality of antennas.
2. The antenna assembly of claim 1 wherein the plurality of antenna
elements comprise at least one of single antennas and diversity antenna pairs.
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3. The antenna assembly of claim 1 wherein the plurality of antenna
elements comprise at least one of monopole antennas and patch antennas.
4. The antenna assembly of claim 1 wherein the antenna isolation
20 configuration comprises an isolating component selected from a group including at least
one of a metallic vane reflector and an RF absorber material.

5. The antenna assembly of claim 1 wherein the antenna isolation configuration is selected from a group including at least one of a polarization configuration and a geometric orthogonalization configuration.

5 6. The antenna assembly of claim 1 wherein the sectorized mounting structure comprises a mounting plate, and wherein antenna elements are retained along the periphery of the mounting plate.

7. The antenna assembly of claim 6 wherein the mounting plate is circular in
10 configuration and wherein the antenna elements are retained on generally cylindrical facets that perpendicularly adjoin a peripheral edge of the mounting plate.

8. The antenna assembly of claim 7 wherein the mounting plate comprises three facets for supporting three antenna elements at respective angular separations of
15 120 degrees.

9. The antenna assembly of claim 7 wherein the mounting plate comprises two facets for supporting two antenna elements at respective angular separations of 180 degrees.

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10. The antenna assembly of claim 7 wherein the facets mount associated radio digital interface electronics components for each respective antenna element.

11. The antenna assembly of claim 1 wherein the antenna assembly is adapted to be received on a host component comprising: a radio digital interface electronic component; a wired network connection; and a port for enabling a selective network connection; so as to enable the antenna assembly to communicate with an electronic network.

12. The antenna assembly of claim 11 wherein the antenna assembly is one of a plurality of antenna assemblies that are received on the host component, for communicating with the electronic network.

13. The antenna assembly of claim 12 wherein the plurality of antenna assemblies comprise first and second antenna assemblies, and wherein the respective antenna elements of each antenna assembly are configured to nest interstitially in an inverted orientation with the antenna elements of the respective other antenna assembly.

14. The antenna assembly of claim 12 wherein each respective antenna assembly comprises three antenna elements, so as to provide a hexagonal antenna arrangement upon nesting the antenna assemblies.

15. The antenna assembly of claim 12 wherein each respective antenna assembly comprises two antenna elements, so as to provide a square antenna arrangement upon nesting the antenna assemblies.

16. A wireless communications system comprising:
a host component comprising a radio digital interface electronic component, a
wired network connection, and a port for enabling a selective network connection;
a removable antenna assembly comprising:
5 a plurality of antenna elements for transmitting and receiving wireless
signals over a plurality of wireless channels;
a sectorized mounting structure is provided for retaining each of the
plurality of antenna elements substantially in an antenna isolation configuration,
so as to enable simultaneous sectorized signal communication of the antenna
10 elements over the wireless channels;
at least one removable network interface for selectively enabling a signal
connection between a radio digital interface component and the plurality of
antennas.

17. The wireless communications system of claim 16 wherein the plurality of
15 antenna elements comprise at least one of single antennas and diversity antenna pairs.

18. The wireless communications system of claim 16 wherein the plurality of
20 antenna elements comprise at least one of monopole antennas and patch antennas.

19. The wireless communications system of claim 16 wherein the antenna
isolation configuration comprises an isolating component selected from a group including
at least one of a metallic vane reflector and an RF absorber material.

20. The wireless communications system of claim 16 wherein the antenna isolation configuration is selected from a group including at least one of a polarization configuration and a geometric orthogonalization configuration.

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21. The wireless communications system of claim 16 wherein the sectorized mounting structure comprises a mounting plate, and wherein antenna elements are retained along the periphery of the mounting plate.

10 22. The wireless communications system of claim 21 wherein the mounting plate is circular in configuration and wherein the antenna elements are retained on generally cylindrical facets that perpendicularly adjoin a peripheral edge of the mounting plate.

15 23. The wireless communications system of claim 22 wherein the mounting plate comprises three facets for supporting three antenna elements at respective angular separations of 120 degrees.

20 24. The wireless communications system of claim 22 wherein the mounting plate comprises two facets for supporting two antenna elements at respective angular separations of 180 degrees.

25. The wireless communications system of claim 22 wherein the facets mount associated radio digital interface electronics components for each respective antenna element.

5 26. The wireless communications system of claim 16 wherein the antenna assembly is adapted to be received on a host component comprising: a radio digital interface electronic component; a wired network connection; and a port for enabling a selective network connection; so as to enable the antenna assembly to communicate with an electronic network.

10 27. The wireless communications system of claim 26 wherein the antenna assembly is one of a plurality of antenna assemblies that are received on the host component, for communicating with the electronic network.

15 28. The wireless communications system of claim 27 wherein the plurality of antenna assemblies comprise first and second antenna assemblies, and wherein the respective antenna elements of each antenna assembly are configured to nest interstitially in an inverted orientation with the antenna elements of the respective other antenna assembly.

20 29. The wireless communications system of claim 27 wherein each respective antenna assembly comprises three antenna elements, so as to provide a hexagonal antenna arrangement upon nesting the antenna assemblies.

30. The wireless communications system of claim 27 wherein each respective antenna assembly comprises two antenna elements, so as to provide a square antenna arrangement upon nesting the antenna assemblies.

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31. The wireless communications system of claim 16 wherein the host component comprises a motherboard for supporting the radio digital interface component, the wired network connection, and the port, for providing power and network connectivity to the antenna elements.

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32. The wireless communications system of claim 16 wherein the wired network connection communicates with a wireless local area network, WLAN, preferably in accordance with a suitable protocol such as the Ethernet standards under IEEE 802.3.

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33. The wireless communications system of claim 16 wherein the network interface comprises a plurality of network interfaces and wherein the port comprises a respective plurality of ports, for connecting with the respective network interfaces.

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34. The wireless communications system of claim 16 wherein the port and the network interface is suitably formed on any suitable adjoining surfaces.

35. The wireless communications system of claim 16 wherein the port and network interface are comprised of a device that enables captured contact, selected from a

group included a spring-loaded electrical connector and an interference-fit electrical connector.

36. The wireless communications system of claim 16 wherein the host
5 component comprises a support structure for removably receiving and retaining the removable antenna element.

37. The wireless communications system of claim 36 wherein the support
structure is generally prismatic in shape, and has a suitably shaped sectional profile to
10 preclude rotation of the antenna assembly.

38. The wireless communications system of claim 37 wherein the support
structure includes a fluted portion formed along a longitudinal surface parallel to a
prismatic axis, so as to allow only one preferred registration orientation of the antenna
15 assembly.

39. The wireless communications system of claim 38 wherein the antenna
assembly comprises an aperture suitably shaped for receiving the support structure
therethrough.

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40. The wireless communications system of claim 39 wherein the port and
network interface are suitably formed on the support structure and the adjoining surfaces
of the aperture.